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ABSTRACT

Issues in the definition and evaluation of "educational adequacy" as a forerunner to establishing a financially equitable Illinois school system are examined in this paper. A list of 30 potential indicators of educational adequacy was developed for three categories: outcomes, resources, and context. A mailed survey to determine which indicators should be used to define educational adequacy elicted responses from 497 superintendents, 12 business representatives, and 20 state legislators. Preliminary findings reflect an emphasis on outcome-based education (OBE). Features of outcome-based education are discussed and recent OBE reform activities in Illinois are described. Data from a 1990 goal assessment study conducted by the State Department of Education support the view that the current Illinois Goal Assessment Project can be strenghtened and utilized as one method for educational evaluation, with a new emphasis on OBE. Four tables are included. (8 references) (LMI)

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ASSESSING EDUCATIONAL ADEQUACY: THE EMPHASIS IS ON RESULTS

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> Theoretically, all children of the state are equally important and are entitled to the same advantages; practically, this can never be quite true. The duty of the state is to secure for all as high a minimum of good instruction as possible, but not to reduce all to the minimum; to equalize the advantage to all as nearly as can be done with the resources at hand; to place a premium on those local efforts which will enable communities to rise above the legal minimum as far as possible. (Cubberly, 1905, p.17)

Children in Illinois deserve the same educational opportunities regardless of where they live. However, total equality is not likely to ever be fully implemented. Before the State can equalize educational opportunities for children, there must be agreement as to what constitutes an adequate education. That there is no clear idea of what constitutes educational adequacy was a major finding of two school finance conferences at Western Illinois University, sponsored by the Lt. Governor's Office and the Illinois Institute for Rural Affairs, in January and May 1990. An Illinois legislator in attendance noted that the legislature must address this issue before a determination can be made about changing the present school finance system. Most of the debate about school finance has focused on the provision of "equal dollars per student" and not on providing sufficient resources to meet the needs of children.

School finance theory has two concepts of equity: **horizontal equity** and **vertical equity**. Horizontal equity means that each student is entitled to receive at least as good an education as that provided to others. Vertical equity means that a student should receive an education that is best for him/her. When asked about problems with the current Illinois funding formula, Gene Hoffman, Co-Chair of the Illinois Legislative School Finance Task Force, stated, "It doesn't take into account the varying cost

EA 023 417

of providing the same service in different parts of the State, and it doesn't yield an equitable educational program for all pupils." The other Co-Chair, State Senator Art Berman, replied: "With limited resources, it has allowed property-rich schools to provide good education while property-poor districts are unable to do so" (NECREL, 1990, p. 10). The current school finance system in Illinois allows some districts, with little effort, to offer students an exemplary curriculum while others struggle to meet the minimum requirements set by the State.

Actions in Other States

Several states have reformed their school finance systems because of litigation. In Edgewood v. Kirby the Texas Supreme Court, in a unanimous decision, stated:

> The amount of money spent on a student's education has a real and meaningful impact on the educational opportunity offered the student. High-wealth districts are able to provide for their students' broader educational experiences including more curricula, more up-to-date technological equipment, better libraries and library personnel, teacher aides, counseling services, lower pupil-teacher ratios, better facilities, parental involvement programs and drop-out prevention courses. They are also better able to attract and retain experienced teachers and administrators (Kirby 777S.W.2d at 393).

The courts in Kentucky addressed the concept of adequacy directly. They compared the test scores of the children in Kentucky with national averages and proved that Kentucky children performed below the national norm.

The funding available has a direct impact on the educational program that a district can offer. The first task in reforming Illinois school finance is to develop a working definition of educational adequacy. Further, it should be clearly determined whether academic programs in low expenditure districts differ from those in high expenditure districts and whether the program offerings in low expenditure districts adversely affect

the students. According to James Ward in The Concept of Adequacy in Illinois School Finance, "... adequacy will not be able to be defined in Illinois until some broad-based consensus is reached on the goals of the state system of public schools" (p.7). While people talk about the basics and discuss preparation for work, the fact is that neither educators nor politicians have articulated the ingredients of a quality education (Banach, 1990, p. 38).

Illinois Institute for Rural Affairs Study

In an attempt to define what constitutes an "adequate education," Hall and Pierson surveyed school superintendents to determine which indicators should be used to define educational adequacy. Using two sources, the Illinois School Report Card and the 17 Education Indicators created by the United States Department of Education, a 30-item checklist of potential indicators of educational adequacy was developed. The check-list is divided into three areas: outcomes, resources and context. The indicators used in the survey are:

Outcomes

Reading performance of students
Writing performance of students
Mathematics performance of students
Science performance of students
Social studies performance of students
College entrance exam scores
High school completion by race and ethnicity
Literacy skills of young adults
Participation of high school graduates in postsecondary education
High school enrollments in mathematics
High school enrollments in science
High school enrollments in english
High school enrollments in social studies
Percent of senior class who are college preparatory
Percent of senior class who are in vocational education

Resources

Current expenditures per pupil
Pupil teacher ratios - elementary and secondary
Elementary pupil teacher ratios

Secondary pupil teacher ratios
Average teacher salary
Teacher experience and training

Context

School enrollment
School enrollment rates for selected age groups
Aspects of the home environment and reading performance
Student drug and alcohol abuse
Teacher job satisfaction
School problems as seen by teachers and the public.
Public opinion ratings of schools and other institutions
State high school graduation requirements
Student mobility rates

Superintendents reviewed the list of indicators of educational adequacy, added any indicators they thought were missing, and selected the ten most important. In total, 505 schools responded to the survey with 497 usable surveys. The indicators which were most frequently selected by school superintendents included several that might have been expected, including reading, mathematics, science and social studies performance (Table 1).

To gain a business perspective, the researchers asked the Illinois Manufacturers Association and the Illinois Taxpayers Federation to each send the checklist to approximately ten members. The object was to determine whether the indicators selected by school officials were consistent with those deemed important by business and industry. At this time, 12 individuals representing upper level management in business/industry have responded (Table 1). The checklist also was sent to members of the Illinois legislature from which 20 responses have been received (Table 1). The Illinois Education Association has been asked to distribute the checklist to some of its membership. School board presidents will be surveyed later.

Results of the Study

Not surprisingly, the first five indicators under **Outcomes** (Reading,

Writing, Mathematics, Science and Social Studies performance) ranked in the top ten in all groups. Other indicators appearing in each of the top ten were: pupil/teacher ratios (particularly elementary), teacher experience and training, and home environment. Teacher job satisfaction was important for both school officials and business respondents. Only legislators ranked college entrance exam test scores high. Also worthy of note is that legislators and business leaders listed literacy skills for young adults as important while school officials did not. Surprisingly, both school officials and business respondents included current expenditures per pupil.

While inclusion of the "basics" was expected, the close congruence between the groups on other indicators was surprising.

Table 1

Top Rated Indicators of Educational Adequacy

Item	School	Legislators	Business
Reading Performance	**416**	**20**	**12**
Writing Performance	**366**	**20**	**12**
Mathematics Performance	**390**	**20**	**12**
Science Performance	**297**	**19**	**8**
Social Studies Performance	**222**	**12**	**8**
College Entrance Exam Scores	133	**7**	3
Literacy Skills for Young Adults	191	**7**	**7**
Expenditures per Pupil	**335**	4	**5**
Pupil Teacher Ratios	**228**	**14**	**4**
Teacher Experience and Training	**248**	**12**	**11**
Aspects of Home Environment and Reading Performance	**270**	**9**	**4**

Student Drug and Alcohol Abuse	76	**7**	1
Teacher Job Satisfaction	**209**	6	**4**

Note: The top ten in each group are boldfaced.

Preliminary findings of the survey reflect an emphasis on outcome-based education as advocated by such groups as the Illinois Manufacturing Association, the North Central Association Commission on Schools, the Iowa Initiative for World Class Schools and Illinois State Superintendent of Schools Leininger.

Outcome-Based Education

There are two basic approaches to outcome-based education (OBE): Mastery Learning and Competency-Based Education (Burns, 1987, p7.). Mastery learning is an individualized approach in which a student masters one unit before progressing to the next. Competency-based education concerns assessing student performance based on established instructional objectives.

Outcome-based education rests on two fundamental principles: 1) instructional activities developed around clearly defined outcomes and 2) schools provide the opportunity for **all** students to achieve learning outcomes. Burns (1987) claims that to adequately understand OBE one must consider five components of instructional programs: philosophy, curriculum, instructional practices, assessment and organizational arrangement (p.8). By the OBE philosophy all students can learn and the teachers' responsibility is to organize instruction to ensure success. An OBE curriculum is organized around learning objectives established by the school. Instructional practices in OBE are directed by mastery learning and instructional decisions in OBE are based on student assessment. Therefore, the teacher must work in an environment that allows for

flexibility in directing the instructional program to meet the student needs (Burns, 1987, p.7).

For more information on OBE, see Robert Burns (1987) Models of Instructional Organization: A Casebook on Mastery Learning and Outcome-Based Education.

Recent school reform activities in Illinois and Iowa have outcome-based education as their focus. Additionally, the Illinois Manufacturers Association and the North Central Commission on Schools have outcome-based education as the theme of their school literature. These activities are reviewed briefly.

North Central Association Commission on Schools

In 1985, the North Central Association Commission on Schools (NCA) approved a pilot project on Outcomes Accreditation as a possible alternative to the traditional NCA accreditation process. In 1987 the NCA approved the Outcomes Accreditation Model as an optional approach to accreditation. The North Central Association Outcomes Accreditation (OA) focuses on student success and quality with equity programs. The NCA requires the school to document the degree to which the school is achieving established learning outcomes. By focusing attention on learning outcomes, the NCA believes that it is empowering schools to account for student performance (NCA, 1989, p. 5).

The OA process sets a high priority on student success. According to the NCA, student success does not mean that some students excel or that on the average students do very well but that **all students** are successful in the learning process (NCA, 1987, p.5). The OA process rests on four basic principles:

All students can learn and succeed;

Success breeds success;

Schools control the conditions of success; and

Clearly defined learner outcomes determine instructional programs and decisions.

The NCA believes that following the OA process, schools answer three basic questions:

Are all students learning?

How do we know they are learning?

What changes need to be made in our program so that all students do learn?

According to the NCA (1989), "Quality programs are those in which student performance meets or exceeds appropriate expectations (p.5)." This definition of a "quality school" does not include schools whose students are not achieving their potential and rejects the idea that students from various socioeconomic classes do not have the ability to learn. Schools seeking OA must fundamentaly believe that **all** students can learn. Traditional discussions of equity have focused on the allocation of funds but OA focuses on student performance. In the OA model, school/staff improvement is seen as an ongoing process.

Illinois State Board of Education

The Regulatory Process Committee (RPC) of the Illinois State Board of Education (ISBE) published an interim report February 1991 and proposed a regulatory system for schools that focuses on student learning and school improvement. The RPC stated that if Illinois wishes to achieve "world class" student performance the regulatory focus must be on documented student performance and school improvement (ISBE, 1991, p.1). According to the RPC, the regulatory process must "augment, empower and improve the capabilities of schools to ensure that students do learn as a result of their schooling (ISBE, 1991, p.1)."

The basic assumptions by the RPC include:

All students can learn.

All children must be served.

The primary purpose of the school-improvement process is to improve student performance.

High expectations are necessary to achieve a world-class education.

The school and its constituents should be given the resources and support to achieve a world-class education.

When a school is not meeting expectations, the State has and should have the authority to intervene.

A school is more effective when its purpose or mission is collectively determined and clearly communicated by the board of education, administrators, teachers, students, parents and community.

The school level must be the unit of analysis for accountability (ISBE, 1991, p.1-2).

Iowa Initiative for World Class Schools

"If students who graduate from Iowa schools are to be equipped to participate in an internationally competitive workforce, the basic principles underlying the state's education system must be reassessed. The state's new vision for world-class education must reflect a fundamental belief in results. It must set high expectations for students, teachers, administrators and state leaders (Iowa, 1990, p.3)."

The July 1990 status report of the Iowa Initiative for World Class Schools Task Force listed three basic assumptions for Iowa students:

Virtually all children can learn at high levels.

Ways exist to teach all students successfully.

What students learn should be challenging to all. How, when and where they learn it and who teaches it should be variables.

Using these assumptions, the Task Force developed eight principles to guide the transformation of Iowa schools. Those principles are:

1. Iowa's world class education system should be based on results.

2. Student performance should be measured by a variety of tools that reflect the complexity of what students are expected to learn.

3. Successful schools, judged on student achievement, should be rewarded; unsuccessful schools should be helped to improve; consistently ineffective schools should be punished.

4. Staff in individual schools must have the authority to make decisions affecting student achievement and must be accountable for results.

5. Educators must have the training, knowledge and leadership skills to help students succeed.

6. Readiness for school is critically important.

7. Schools in the new system must be responsible for ensuring collaboration with health and human services agencies to reduce barriers to student learning.

8. Schools must assist parents in assuming their full role as partners in educating their children (p. 4 - 5).

Illinois Manufacturers Association

David K. Watkins, Executive Vice President of K.A. Chemicals, Inc. and a member of the IMA board of directors, in a presentation to the Western Illinois Administrators Round Table, suggested that the existing Illinois Assessment Program could develop standards of achievement for assessing how well schools are doing. The IMA believes that current recognition standards for school accreditation should focus more on outcomes than on process or inputs. The IMA further believes that there can be no accountability without incentives for success and sanctions for failure. The incentives could include release from state mandates, grants for projects and more money. Sanctions could include closing schools, forcing consolidation and withholding of state funds. Sanctions could be used to protect both taxpayers and children from schools that fail in their mission. The IMA position on school district accountability is remarkably similar to the initial results of Iowa's efforts to develop "World Class Schools" and the report of the Regulatory Process Committee of the ISBE.

Illinois Goal Assessment Project Results

In the May 1990 Performance Profiles: Illinois Schools Report to the Public, the Illinois State Board of Education (ISBE) reported the results of the 1988-89 Illinois Goal Assessment Project (IGAP) and focused on "rich and poor" schools. The ISBE reported that on average, Illinois students' achievement in reading and mathematics surpassed the national averages for grades 3, 6 and 8 (Table 2).

Table 2
Illinois Goal Assessment Program
Test results for Grades 3, 6 and 8
1988 - 1989

Grade	Reading Achievement		Mathematics Achievement	
	Illinois	National	Illinois	National
3	254	230	250	218
6	249	240	250	231
8	255	252	250	218

Note: The IGAP reading and math scale scoring has a 1 - 500 range. The IGAP math was given for the first time in 1989 and an average score of 250 was assumed.

Source Performance Profiles: Illinois Schools Report to the Public, ISBE, May 1990, p.6.

While Table 2 leads one to believe that Illinois students are achieving at high levels, the data on averages does not indicate the difference between schools on the IGAP tests. Table 3 reports the range of IGAP reading and math scores for schools at the 1st, 25th, 50th, 75th and 99th percentiles. Also presented are the ACT test scores for all students since legislators surveyed listed college entrance exams as one possible indicator of educational adequacy.

In grade 3, there is a difference in average reading test scores of 231 points and a difference of 236 points in the average mathematics scores between schools at the 1st and 99 percentiles (Table 3). This tremendous difference in achievement test score results is also true for grades 6 and 8. The table does not tell the reader whether the same schools are always

in the 1st and the 99th percentiles. The ACT test scores raise concerns when the average composite scores range from 9.2 at the 1st percentile to 22.2 at the 99th percentile. It is clear that graduates of some Illinois schools are not eligible for admission to the state universities because of low ACT scores.

Table 3

Illinois Goal Assessment Program - 1989
Reading Mathematics and ACT Test Scores by Percentiles

Reading Scores

Grade	State Mean Score	Percentiles 1st	25th	50th	75th	99th
3	254	138.7	231.0	266.0	291.0	369.0
6	249	144.0	221.5	256.0	280.0	334.5
8	255	151.0	225.0	258.0	283.0	342.0
		Mathematics Scores				
3	250	136.0	219.0	259.0	291.0	372.3
6	250	130.0	214.0	258.0	287.0	361.0
8	250	124.0	213.0	255.0	286.0	362.0

Note: The IGAP math was administered for the first time in 1989 and an average score of 250 (out of 500) was assumed.

ACT Test Scores
All Students

Subjects	State Mean Score	Percentiles 1st	25th	50th	75th	99th
Composite	18.8	9.2	17.2	18.7	20.0	22.2
English	18.4	8.9	17.3	18.5	19.5	21.7
Mathematics	17.7	7.2	15.1	17.2	19.1	22.3
Social Studies	17.3	7.2	15.3	17.2	18.5	21.3
Science	21.3	12.6	19.9	21.4	22.6	25.0

Source: Performance Profiles: Illinois Schools Report to the Public, ISBE, 1990, p.

The ISBE also grouped schools by Equalized Assessed Valuation per Pupil (EAVPP) and compared test results for grades 3, 6 and 8 of schools in the top quarter and bottom quarter as well as the ACT test results (Table 4). presents the comparative data.

Table 4
Average IGAP and ACT Test Scores for Schools Grouped by EAVPP

Grade 3

Report Card Indicator	EAVPP in the Top Quarter (N=209)	EAVPP in the Bottom Quarter (N=209)	All Districts (N=838)
IGAP Reading	292	259	254
IGAP Math	294	246	250

Grade 6

Report Card Indicator	EAVPP in the Top Quarter (N=209)	EAVPP in the Bottom Quarter (N=209)	All Districts (N=838)
IGAP Reading	282	248	249
IGAP Math	294	247	250

Grade 8

Report Card Indicator	EAVPP in the Top Quarter (N=209)	EAVPP in the Bottom Quarter (N=209)	All Districts (N=838)
IGAP Reading	285	252	255
IGAP Math	291	242	250

Average ACT Test Scores - All Students

Report Card Indicator	EAVPP in the Top Quarter (N=209)	EAVPP in the Bottom Quarter (N=209)	All Districts (N=838)
Composite Score	19.9	18.2	18.8
English	19.3	18.1	18.4
Mathematics	19.1	16.4	17.7

Source: Performance Profiles: Illinois Schools Report to the Public, ISBE, 1990, p.33

Tables 3 and 4 clearly demonstrate a wide range in student achievement as measured by the IGAP and the ACT and differences in student achievement when school district wealth is considered. It is noted from Table 4 that mathematics achievement, as measured by the ACT, in schools with low EAVPP is more adversely impacted than English achievement. Currently, the only use of the test results is to report them to the public.

Conclusions

The data support that the IMA view that the current Illinois Assessment program could be strengthened and used as **one method** to assess how well Illinois schools are accomplishing their mission. If accepted indicators

of educational adequacy can found, and if standards of achievement defined, then some of the machinery is in place to assess school performance. If the IMA model or the Iowa model were enacted (i.e. rewarding schools for high student achievement, helping low achieving schools improve student performance and penalizing chronically low-achieving schools), the initial emphasis should be on helping schools identified as low achieving to increase their effectiveness. Clearly, both high achieving and low achieving schools should be examined to identify causes of differences in student achievement. Also, the School Report Card data needs to be more extensively analyzed to identify significant factors that impact student achievement in Illinois schools. Decisions must be made about which educational programs and services should be made available to all Illinois students and then how to best measure school district success.

Survey results, coupled with the Illinois School Report Card data, place a new emphasis on outcome-based education. Instead of the traditional regulatory process in use for the past century, schools could be rewarded or sanctioned based upon ability to produce the desired student achievement.

This study is a minor step in the process of defining educational adequacy and clearly demonstrates a need for further research. The simple question to be answered by this research and all further research concerning the effectiveness of student programs, teachers and schools should be **Do They Get The Desired and Measurable Results?**

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